Liquid Crystals 2018

Phase behaviour, structural properties and intermolecular interactions of systems based on substituted thiacalix[4]arene and nonionic surfactants

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Abstract

© 2018, © 2018 Informa UK Limited, trading as Taylor & Francis Group. Supramolecular organised materials were prepared from nonionic surfactants and the following macrocyclic ionic liquids: n-tert-butylthiacalix[4]arenes containing quaternary ammonium fragments with amino acid substituents. Tetraethylene glycol monododecyl ether and decadiethylene glycol monododecyl ether were used as nonionic surfactants. They form lamellar and hexagonal mesophases in aqueous media, respectively. Liquid crystal and structural properties of these systems were studied. Intermolecular interactions of system components leading to formation of lyomesophases were estimated. Molecular structure of thiacalixarene contributes to the formation of a hydrogen bonding with surfactants. This process, in turn, initiates formation of a denser packed hexagonal structure.

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Keywords

Lyotropic mesophase, macrocyclic ionic liquids, surfactant, thiacalix[4]arene

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